IN THE CLAIMS:

1-9 (canceled)

10. (currently amended) A method for calibrating an engraving amplifier in an electronic engraving machine for engraving printing cylinders for gravure printing, comprising the steps of:

acquiring an engraving signal for actuating an engraving stylus of an engraving member from engraving signal values derived from engraving data representing desired tone values and a periodic vibration signal in an engraving amplifier that can be adjusted by setting electrical signal values corresponding to electrical settings for generating an engraving raster, said electrical signal values modifying at least one of the parameters "vibration", "light", "dark", and "medium gradation";

with the engraving stylus, engraving cells into the printing cylinder, the actual dimensions of the cells representing engraved actual tone values;

calculating transmission functions adjusted at the engraving amplifier which reproduce relationships between variations~~, which are adjusted at the engraving amplifier,~~ of the electrical signal values and resulting variations of ~~the~~ geometric actual dimensions of the engraved cells;

~~setting signal values for modifying at least one parameter "vibration", "light", "depth", "dark", or "medium gradation" at the engraving amplifier;~~

with the electrical signal values, engraving test cells for predetermined desired tone values corresponding to desired dimensions, and measuring their geometric actual dimensions;

calculating difference values from the actual dimensions and the desired dimensions of the cells ~~upon consideration~~ and by use of the transmission functions;

correcting the electrical signal values by adding the difference values;

the steps of ~~setting~~ engraving test cells and connecting the electrical signal values ~~through correcting the signal values~~ are repeated ~~using the corrected signal values,~~ until the actual dimensions of the test cells are at least within a tolerance range about the desired dimensions[[;]], and to shorten calibration time,

in each sequence of the steps from setting the electrical signal values through correcting the electrical signal values, comparing the actual dimensions of the cells to the desired dimensions;

if the actual dimensions are outside the tolerance range, recalculating the transmission functions;

computing new difference values by use ~~upon consideration~~ of the recalculated transmission functions; and

correcting the electrical signal values using the new difference values.

11. (currently amended) The method of claim 10 wherein the recalculation of new transmission functions respectively occurs by difference formation between the ~~adjusted~~ corrected electrical signal values and by difference formation between the functionally corresponding actual dimensions of the cells of two successive sequences from the step of setting the electrical signal values to the step of correcting the electrical signal values.

12. (currently amended) The method of claim 10 wherein the dimension of a cell is a cross-diagonal, a longitudinal diagonal and ~~penetration depth~~ channel width.

13. (currently amended) The method of claim 10 wherein the difference value of the vibration signal value for the parameter "vibration" is computed from a difference between the actual dimensions and the desired dimensions of a test cell representing a tone value ~~domain "depth"~~ "dark."

14. (currently amended) The method of claim 10 wherein

a fictional cross-diagonal for a test cell represents the tone value ~~domain~~ parameter "light" as a sum of measured cross-diagonals and a cross-diagonal variation which arises owing to a variation of a the vibration signal;

a deviation of the fictional cross-diagonals from desired cross-diagonals is computed; and

a difference value of the engraving electrical signal value for the parameter "light" is computed from the determined deviation and the transmission function which represents the relationship between a variation of the engraving electrical signal value for the parameter "light" and the resulting variation of the cross-diagonals of a the test cell representing the tone value domain "light".

15. (currently amended) The method of claim 10 wherein

a fictional cross-diagonal for a cell representing the tone value domain ~~"depth"~~ "dark" is determined as a sum of the measured cross-diagonals and a cross-diagonal variation that occurs owing to the variation of the vibration signal;

the deviation of the fictional cross-diagonals from the desired cross-diagonals is determined; and

the difference value of the engraving signal value for the parameter ~~"depth"~~ "dark" is computed from the determined deviation and the transmission function, which reproduces a relationship between a variation of the engraving signal value for the parameter ~~"depth"~~ "dark" and a resulting variation of the cross-diagonals of a test cell representing the tone value domain ~~"depth"~~ "dark".

16. (currently amended) The method of claim 10 wherein

a fictional cross-diagonal for a test cell representing the tone value ~~domain~~ parameter "medium gradation" is computed as a sum of the measured

cross-diagonals and cross-diagonal variations that occur owing to the variation of the vibration signal;

a deviation of the fictional cross-diagonals from the desired cross-diagonals is determined, and

a difference value of the engraving electrical signal value for the parameter "medium gradation" is computed from the determined deviation and the transmission function, which reproduces a relationship between a variation of the engraving electrical signal value for the parameter "medium gradation" and the resulting variation of the cross-diagonals of a the cell representing a the tone value domain "medium gradation."

17. (currently amended) The method of claim 10 wherein

the relationships between the electrical signal values and the actual measurements of the engraved test cells are approximately linear; and

the relationships are defined by transmission coefficients.

18. (currently amended) The method of claim 10 wherein the electrical signal values that are set for the first sequence from the step of setting the electrical signal values to the step of correcting the electrical signal values are experimental values.